Gallatin County Planning Board
Infrastructure Committee
Water and Wastewater Subcommittee
Record of Meeting: July 21, 2008

Members present: C.B. Dormire (Subcommittee Chair); Kerry White; Sean O'Callaghan, County Planning Department.

Guest: David King, Rae Water & Sewer District

1. **Call to Order:** 3:57

2. **Approval of July 7, 2008 Meeting Minutes:** Decision delayed because only one voting member was present. CB suggested several changes to the minutes that will be made and circulated to the Committee members for the next meeting.

3. **Discussion with David King about Rae Water and Sewer District:** Rae is a public water and sewer district that has been around for approximately 30 years. They currently have approximately 350 service connections, with the total number of connections possible at buildout estimated to be somewhere between 1500–2000.

   Water supply is provided by five groundwater wells. The wells are approximately 120-feet deep and the water they provide is currently not chlorinated.

   The Rae wastewater treatment system is a "sequencing batch reactor" – biologic nutrient removal, activated sludge plant. It provides one of the higher levels of treatment. The plant treats nitrates to 1-2 parts per million ("ppm"), and the maximum allowable is 5 ppm. Treated wastewater is disinfected with UV light and then put back into the ground through infiltration galleries. Right now the plant is designed for a maximum of 200,000 gallons per day ("gpd") plant, and they are looking at expanding to 400,000 gpd. Their plant is designed in a modular manner, such that components can be added to expand.

   The Rae plant treats solids in an aerobic digester and then stores them in a reed bed. The reed bed can handle approximately 10 years worth of sludge.

   The district performs sampling on a daily basis and does monthly reporting. The testing is done for nitrate, nitrite, phosphate, , ammonia (no regulatory limit, 0.6 ppm avg. test), biological oxygen demand (BOD), total suspended solids (TSS), chloride (no regulatory limit), and fecal coliform (50 ppm regulatory limit, non-detectable in test results). David clarified that nitrate and nitrite are reported cumulatively as total nitrogen, and Rae has a 5 ppm limit with a detected average of 2 ppm.

The district has an issue with groundwater infiltration in their system. During the high groundwater in the spring and during irrigation season, the infiltration adds between 30,000–40,000 gpd of inflow into the wastewater treatment plant.

Rae has four test wells that are down gradient of the infiltration galleries. Those wells must be tested quarterly.

David said that he was unsure if the system could be modified to treat pharmaceuticals, and noted that nationally there isn't really an accepted best practice to treat for them. David stated that mean cell residence time at the plant is relatively long (average is 22 days, compared to some plants that average 6 days) and the longer residence time helps to treat for pharmaceuticals. Microfiltration and some other methods are being studied for treatment of pharmaceuticals.

Rae has several lift stations; everything is pumped into the plant. The pumps aren't currently utilized to normalize inflow, but as the plant gets nearer to operating capacity, they may use available to technology to normalize inflow to maximize operating capabilities of the plant.

David talked about how the best wastewater treatment system for a given situation is so dependant on site specific circumstances. Lagoon type systems are typical in rural areas where land is cheap, because they require a large footprint. The water from lagoon systems is generally reused for agricultural irrigation. The next step up would be systems like Rae, Utility Solutions, or Manhattan. Another step up from there is something like the City of Bozeman's plant. He mentioned that Kalispell probably has the most high-tech system in the State, offering the highest level of treatment.

Rae charges a system investment fee to new development so developers are buying into the system. Developers must also pay for any required extensions in infrastructure.

David discussed the organizational structure of the Board of Directors for the District and the ability of landowners within the District to vote for the Board of Directors. Rates in the District are relatively high due to debt load from a lawsuit in the 1980's and from the system upgrade. Rates were raised significantly 10-years ago, but have held steady since then. The District will raise rates next year by $4.19/month. Rates currently average about $78 a month, but users are billed based on metered usage. The District obtained TSEP, USDA Rural Assistance, CDBG, and DNRC grants totaling 1.8 million dollars, while the total cost of the upgrade was 2.4 million dollars.

The District reports to Montana DEQ. DEQ must operate a program that is at least as stringent as the minimum federal standards. Rates are regulated by the Public Service Commission.

The District maintains water infrastructure up to and including the curbstop, and the main line for sewer infrastructure. David stated that there are three properties in the Rae District that they supply wastewater treatment to, but don't supply water to.

David also operates the Riverside Water and Sewer District. That system has approximately 120 hook-ups, and is not anticipated to grow. It is a lagoon type system.

David mentioned that it was his understanding that River Rock system was permitted in the 1970's and built to those specifications rather than the more current specifications.

Rae's discharge permit is based on drinking water standards as opposed to TMDLs or other surface water standards that would be applicable for a system that discharges to surface water.

David described the Bowman-Schaffer model that is the standard model used for nitrate modeling. It is a dilution model that looks primarily at the groundwater gradient and porosity of soil.

4. **Board Discussion of Further Consulting Engineering Study:**
CB suggested that the idea of the engineering study be the focus of the next meeting.

Kerry questioned whether we would try and develop a scope of work and objectives at the next meeting.

5. **Member Reports:** CB visited with Alan English regarding the work they are doing for the Subcommittee and estimated that they might have the work completed sometime in early September.

Kerry attended the Legislative Environmental Quality Council meeting in Helena on July 14th. Kerry has some information (Memo to the Legislative Audit Committee from Angie Grove, Deputy Legislative Auditor, and a report from DEQ to the Montana Environmental Quality Council) that he picked up at that meeting that he suggested be distributed to other members and made exhibits.

Kerry asked CB if he thought this Subcommittee should advise the Commission on any of the pending legislation.

CB stated that he thought this group's work might be a little too late to make any specific recommendations for the coming legislative session, but that the subcommittee ought to discuss it.

6. **Next meeting Date and Agenda:** Engineering consulting study and legislation.

7. **Other Business:** None

8. **Adjourn:** 6:05